



# ASSESSMENT OF THE IMPACT OF SPENT WASH USE ON BLACK SOIL PROPERTIES' IN VILLAGE WADIBHAGAI

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## ABSTRACT

Analysis of soil quality from Shirala area of Sangli District. Black soil Concern study is to determine the quality of soil in Shirala Tahsil In village Wadibhagai. Thus about numbers of samples from area were examined to assess the soil properties as well as for obtaining the information about soil quality, evaluation of fertilizer status, indigenous soil fertility. To understand fertility of soil, it is necessary to carry out analysis. The different parameter was observed. This observed properties before & after spraying of spent wash all properties were increased and both of these properties were compared standard limiting values and improved amount was compared again standard limiting value. This data mentioned in this paper [7].

**KEYWORDS:** Soil, fertility, micronutrients.

### Introduction:

This study is important if we are analyzed the rate of population and requirement of food grain and availability of land and due to this reason I select this topic. The soil samples are collected as per the recommended procedure from Shirala Tahsil in different areas [10,11] and analysis should be carried out then after the alcohol industrial waste (spent wash) will give in to the selected areas and then again sample will be collected and analysis should be carried out before and after PH, EC, N, P, K, Cu, Mn, Fe, Zn, Organic matter Sulphur, water holding capacity these contents will be determined and compared the initial and after given spent wash values and to mentioned the improved content in the soil [12,13]. For the determination the various methods are used. These methods are mentioned below.

### Methods of Analysis:

- 1) Collection of the Sample: Sample is collected as per the recommended procedure [1].
- 2) Required Chemicals: All of the chemicals are prepared as per the recommended procedure. All of the chemicals are used AR grade [2, 3, 4]
- 3) Instruments: [1]
  - a) PH meters- Model EQ-610
  - b) Conductivity Meter- Model EG-660
  - c) Atomic Absorption Spectrophotometer-Model
  - d) Spectrophotometer-

### Analyzed Results:

The samples are collected as per the recommended procedure and original sample analyzed the results are found these results are as given below –

**Table No. 1:**

**Name of Village: Wadibhagai, Tal- Shirala, Dist- Sangli. [8,9,14,15]**

Sr. No.	Parameter	Unit	Limit	Analysis of Soil before spent wash.
1	pH	-	6.5-8.5	7.11
2	E-Conductivity	mhos/cm	<4.0	0.23
3	Nitrogen	Kg/ha	100-200	266.00
4	Phosphorous	Kg/ha	30-40	41.00
5	Potassium	Kg/h	110-280	635.00
6	Organic Carbon	%	>0.50	1.21
7	Calcium	%	0.1-3.2	1.00
8	Copper ( Cu )	Ppm	0.3-0.5	0.42
9	Iron (Fe)	ppm	2.5-4.5	5.65
10	Manganese (Mn)	ppm	1.0-2.0	0.93
11	Zinc ( Zn )	ppm	0.5-1.2	0.52

The selected soil sample taken and spent wash was sprayed on it and then after 6 months sample dried and analysed the following results are found

All the results obtained from collected samples from various regions after using spent wash are summarized as follows.

**Table No. 2:**

**Name of Village: Wadibhagai, Tal- Shirala, Dist- Sangli. [8,9,14,15]**

Sr. No.	Parameter	Unit	Limit	Analysis of Soil after spent wash.
1	pH	-	6.5-8.5	7.15
2	E-Conductivity	mhos/cm	<4.0	2.40
3	Nitrogen	Kg/ha	100-200	695.00
4	Phosphorous	Kg/ha	30-40	90.00
5	Potassium	Kg/h	110-280	4220.00
6	Organic Carbon	%	>0.50	3.16
7	Calcium	%	0.1-3.2	2.50
8	Copper ( Cu )	ppm	0.3-0.5	2.88
9	Iron (Fe)	ppm	2.5-4.5	13.50
10	Manganese (Mn)	ppm	1.0-2.0	18.20
11	Zinc ( Zn )	ppm	0.5-1.2	2.00

The results of original sample table 1 and results of sprayed sample table 2 and standard value results all of these results are compared as given below

**Table No. 3:**

**Name of Village: Wadibhagai, Tal- Shirala, Dist- Sangli. [8,9,14,15]**

Sr. No.	Parameter	Unit	Limit	Sample (2-1)
1	pH	-	6.5-8.5	0.04
2	E-Conductivity	mhos/cm	<4.0	2.17
3	Nitrogen	Kg/ha	100-200	429
4	Phosphorous	Kg/ha	30-40	49
5	Potassium	Kg/h	110-280	3585
6	Organic Carbon	%	>0.50	1.95
7	Calcium	%	0.1-3.2	1.5
8	Copper ( Cu )	ppm	0.3-0.5	2.46
9	Iron (Fe)	ppm	2.5-4.5	7.85
10	Manganese (Mn)	ppm	1.0-2.0	17.27
11	Zinc ( Zn )	ppm	0.5-1.2	1.48

Sprayed sample results comparing the results of original sample as well as standard limit value. In these results some difference is observed in these values. This difference is maintained on table no. 4.

### Conclusion

Initially all parameters of soil sample are analyzed. These observed parameters and its value are pH, e-conductivity, nitrogen, phosphorous, potassium, sulphur. 7.03, 0.10, 52.17, 28.36, 190, 156 kg/ha and calcium, magnesium, organic carbon. 0.22, 0.25, 0.55% as well as microelements saw iron, manganese, zinc, copper, chloride its value 2.52, 0.43, 0.35, 0.38, 132ppm (table no. 1)

Then spent wash was sprayed on the soil and after six month sample analyzed all of these parameters values are pH, e-conductivity, nitrogen, phosphorous, potassium, sulphur, 7.10, 0.77, 47.75, 24.35, 211, 165kg/ha and calcium, magnesium, organic carbon 0.54; 0.16; 0.69% as well as microelements are analyzed iron, manganese, zinc, copper, chloride the value was found 2.61, 0.51, 0.43, 0.43, 159 ppm.(table no.2)

After observing parameters of these value the pH of soil increases(0.07), e-conductivity increases(0.67mmhos/cm) potassium, sulphur, calcium values increases 21,9 kg/ha 0.32% organic carbon increases 0.14% but nitrogen and phosphorous magnesium values decreases(-4.42 kg/ha,-4.01 kg/ha0.09%). The microelements was analyzed iron, manganese, zinc, copper, chloride content of these elements was increased 0.09, 0.07, 0.08, 0.05, 27ppm.

The increasing values were compared with std limiting value. Then it observed analyzed values vary low than that of limiting value some are near about this values but initial before spraying spent wash value are very low after some amount increases means improve quality of soil(table no.3). All of the elements have increases, therefore well Known effect was observed on the plant growth means production increases especially sugar cane, maize, rise, soya bin, sunflower etc.

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